

**ABSTRACT OF THE DISCLOSURE**

A modular inductively coupled plasma torch assembly is described. A rear connector unit is positioned and detachably held at a rear end of a tubular plasma chamber to provide a flow of material into it. Detachable connector units are positioned on opposite ends of a tubular jacket, and hold the tubular plasma chamber concentrically within the tubular jacket so as to define an annular chamber between the two tubes. An inductor coil is disposed concentrically around the tubular jacket and energized so as to generate plasma from the material flowing in the tubular plasma chamber. To cool the tubular plasma chamber, coolant flows through the annular chamber using inlet and outlet ports in the detachable connector units for such flow of coolant.